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J. BAYLOR ROBERTS

WESTERN DRESS IS MORE AND MORE IN STYLE IN POSTWAR JAPAN (Bulletin No. 2)

Bulletin No. 1, October 8, 1951

Science Proves Meteor Caused Quebec Crater

AS the earth speeds along on its path around the sun, it travels a dusty and rocky road, constantly colliding with meteors and rocks that are flying through space. Most of the aimlessly hurtling objects, when caught in the net of earth's atmosphere, burn themselves to nothing in the torrid friction. These are "shooting stars."

The meteors that get through the net and strike the earth are called meteorites. Few of great size have landed during recorded time, but scattered over the earth are several craters where large ones crashed ages ago. Until last summer the largest-known crater of proved meteoritic origin was the Canyon Diablo pit near Winslow, Arizona.

National Geographic Society Enters Picture

In August, the National Geographic Society-Royal Ontario Museum Expedition uncovered evidence that gigantic Chubb Crater, in far-north Quebec Province (map, next page), had been caused by a meteorite. It is almost three times as wide and deep as the Arizona scar.

Lake-filled Chubb Crater, covered by ice and snow most of the year, was first noticed on aerial photographs by Frederick W. Chubb, a prospector for gold and diamonds. In July, 1950, he and Dr. Victor Ben Meen, director of Toronto's Royal Ontario Museum of Geology and Mineralogy, became the first white men to reach the awesome crater.

"We started up the 25-degree slope of the rim," Dr. Meen reported. "It seemed to be a jumbled heap of fragments of granite. After a climb of nearly 300 feet, we set foot on the top and looked down into the crater. We were so awed I don't believe we spoke or even shook hands.

"Hundreds of feet beneath us lay a perfectly circular lake, cupped in a crater whose walls rose steeply in a slope of 45 degrees. No sound broke the stillness except the continuous grinding of the ice on the water far below and the wind blowing across the crater rim."

Semi-winter in Midsummer

Their visit was too short for full scientific exploration; so the National Geographic Society immediately planned an expedition for the next summer. Headed by Dr. Meen, the airborne party landed July 25, 1951, on an ice-free lake near the crater. The short northern summer gave them less than a month to find evidence that Chubb is of meteoritic origin, and thus the largest-known meteor scar on the face of the earth.

The scientists wore heavy woolens and parkas. Temperatures ranged from 36 to 45 degrees. Chilling rain or snow fell nearly every day.

Three weeks' work with mine detectors and other specialized equipment produced nothing conclusive. As sub-freezing weather began to close in, the expedition scientists intensified their magnetometer survey of the seven-mile-round crater rim. In the final 48 hours before their flyaway, August 22, they came dramatically upon the presence of a "magnetic anomaly" under the eastern portion of the pushed-up crater rim.

ENTERED AS SECOND CLASS MATTER APRIL 27, 1943, POST OFFICE, WASHINGTON, D. C., UNDER ACT OF MARCH 3, 1879.
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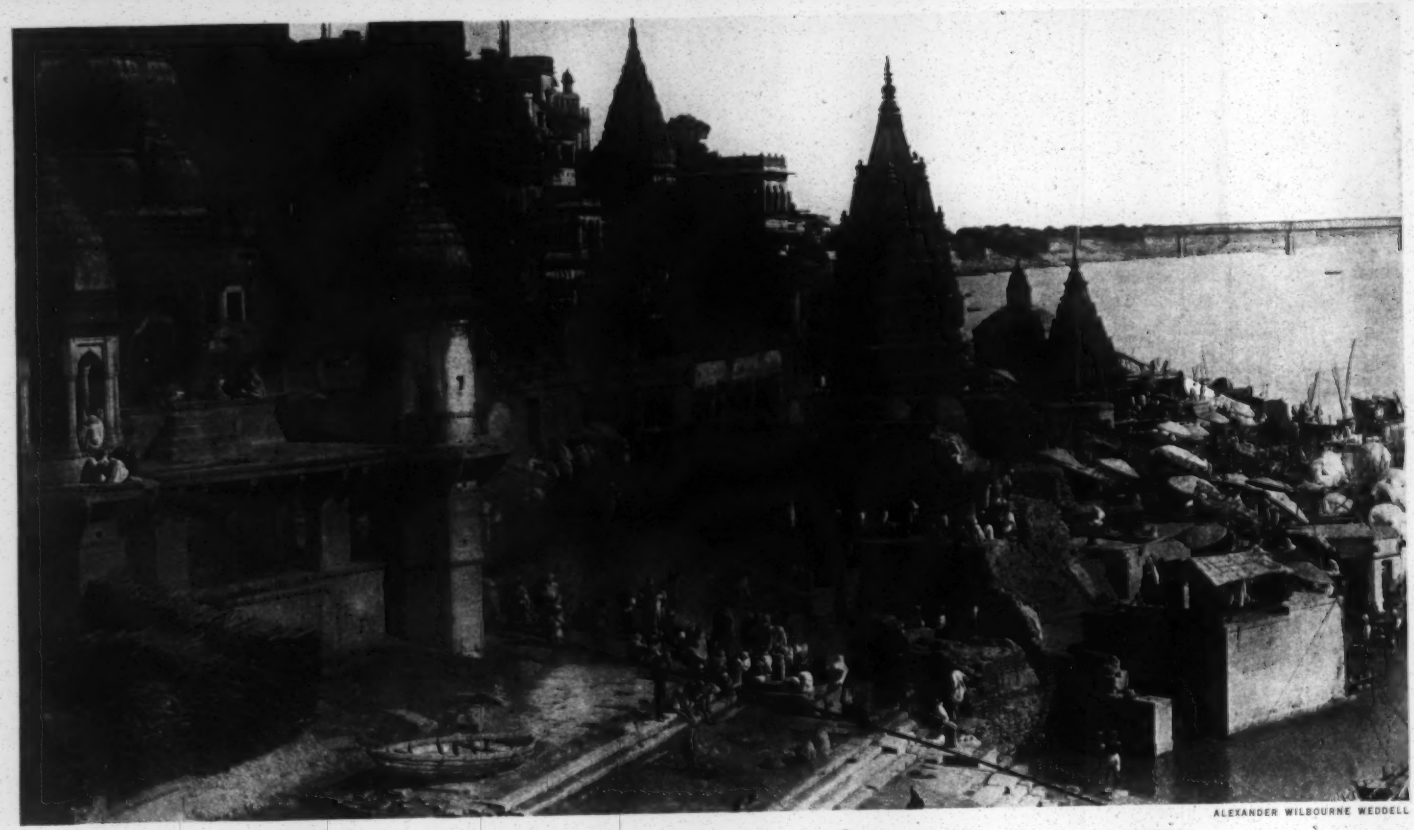

ALEXANDER WILBOURNE WEDDELL

BENARES, RISING IN FANTASTIC STONE TIERS FROM THE SACRED GANGES, IS INDIA'S HOLY CITY OF THE HINDUS

Where the Ganges curves past Benares, temples and mosques with bulging domes and soaring minarets—a bewildering array of many styles of Oriental architecture—step up the slopes from the ghats (landing places). Benares is to the devout Hindu what Mecca is to the Moslem. From all over India and from other lands sharing in the Colombo Plan (Bulletin No. 5), come worshippers to wash away their sins in the sacred river and to cremate their dead on the burning ghats.

Rebuilt Tokyo Resuming World Capital Role

TOKYO, the city of the Mikado, once again became capital of a sovereign nation with the recent signing of the Japanese peace treaty.

Few signs are left of the gutted, fire-blackened, half-deserted metropolis which saw World War II end at its doorstep. Between Haneda Airport and the city rise occasional twisted skeletons of bombed-out factories. Weary charcoal-burning taxis give travelers the impression of riding on self-propelled stoves. Cost of living is so high that an average shop girl or stenographer needs three weeks' salary to buy one pair of Western-style shoes.

New Face on a Warrior Camp

But stores, streets, and cafes are crowded with busy Japanese, the majority in Western dress (illustration, cover). As if sowed of dragon's teeth, whole new city districts have sprung up from scorched earth. Tokyo is fast building a new city and a new way of life.

Nearly 1,000 years ago, Tokyo was a fishing village by a wide shallow bay (Tokyo Wan). Japanese political history, however, does not mention the place before the end of the 12th century. When a warrier named Dokan Ota built a fortified camp there in 1457, it was known as Edo.

Tokugawa family *shoguns* ruled the nation for 250 years from Edo's walled castle, although the nominal seat of power was the imperial court of Kyoto. Then, 15 years after Commodore Perry opened Japan's door, the Meiji restoration of 1868 overthrew the shogunate. Meiji, grandfather of today's Emperor Hirohito, moved to Edo and changed its name to Tokyo, or "eastern capital."

The city grew, despite terrible disasters. Fire so often swept Old Tokyo, with its wood-and-paper homes, that there is a Japanese proverb saying "The fire is Edo's (Tokyo's) flower." Even today, for lack of enough alarm boxes and telephones, there are fire-watchtowers scattered across Tokyo as if it were a forest.

Top Hats Behind Home Plate

The city is a curious combination of old and new. The imperial palace, with its two-mile-round moat overhung with dark gnarled pines, faces the Marunouchi district of imposing modern office buildings, among them the honey-colored Dai-ichi Sogo, headquarters of the Supreme Commander for the Allied Powers (SCAP).

When Hirohito drove through the streets, Tokyo's upper windows once had to be shuttered to prevent any one from looking down upon the emperor. When he attended a baseball game, all dignitaries—including the umpire—wore top hats and tails. Now news photographers follow the emperor wherever he goes; Japan, with a postwar democratic constitution, is everywhere "trying Freedom's road."

The Ginza is the heartbeat of Tokyo. Crowded along this Far Eastern Broadway are shops of all descriptions, as well as scores of rickety venders' stalls lining the sidewalks. Here can be bought anything from fruit

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Magnetic anomaly is a scientific term for a magnet-indicated underground metal-bearing mass. In the glacier-scoured granite region of Chubb Crater, it constitutes proof of iron-bearing meteoritic material.

Scientifically, this magnetometer proof is the next best thing to actual recovery of meteorite fragments. The same method years ago showed Arizona's Canyon Diablo Crater to be meteoritic. Boreholes under that crater failed to strike any buried meteorite mass but tons of iron meteorite fragments weighing up to 1,000 pounds each were found scattered for miles over the adjacent land.

Chubb Crater's maximum depth is 1,350 feet; its rim diameter, two miles. The rim pushes up to 400 feet above the surroundings. The lake filling the crater is one of Canada's deepest.

NOTE: The Province of Quebec is shown on the National Geographic Society's map of Canada, Alaska & Greenland. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

For further information about meteorites, see "Mysterious Tomb of a Giant Meteorite" (Arizona), in the *National Geographic Magazine* for June, 1928; for material on Canada, see "Sea to Lakes on the St. Lawrence," September, 1950; "Quebec's Forests, Farms, and Frontiers," October, 1949; "Exploring Ottawa," November, 1947; "Servicing Arctic Air Bases," May, 1946; and "Gentle Folk Settle Stern Saguenay," May, 1939. *(Back issues of the Magazine may be obtained from the Society headquarters at 60¢ a copy, 1946 to the present date; $1.00 from 1930 through 1945; and $2.00 from 1912 through 1929. Earlier issues, when available, at varied prices.)*

SCIENTISTS SOLVE THE RIDDLE OF CHUBB CRATER, A HUGE SCAR GOUGED IN UNGAVA'S GRANITE

Last summer the National Geographic Society-Royal Ontario Museum Expedition reached the sub-Arctic part of Quebec province known as Ungava—the "faraway" place. They obtained proof that the newly found crater was caused by a meteorite ages ago. It is by far the largest such scar on earth.

Bulletin No. 3, October 8, 1951

High Prices Affect Treaty with Iroquois

INFLATION has hit even the price of peace! So think descendants of the Iroquois who signed the Canandaigua Treaty with the young United States in 1794.

These Indians—members of the Six Nations (at one time Cayugas, Mohawks, Oneidas, Onondagas, Senecas, and Tuscaroras)—have lived on their own lands in central and western New York since long before the name New York applied to any part of North America.

United States Promises "Cloathing," Animals, Implements

A nation within a nation, though scattered through the state on several reservations, the Indians annually, on July 1, renew their pledge of "peace and friendship" made a century and a half ago.

By the terms of this Treaty of Canandaigua (so called after the Finger Lakes town where it was signed), the boundaries of the tribal lands were defined, and the United States agreed that, "to promote the future welfare of the Six Nations," it would appropriate $4,500 "to be expended yearly forever, in purchasing cloathing, domestic animals, implements of husbandry, and other utensils."

On their part, the Six Nations agreed never to make war on or claim the lands of the United States. Previously, Gen. Lafayette had parleyed with the chiefs. President Washington, himself, guaranteed that the Indian lands in the Finger Lakes region of New York would never be violated.

It is the matter of the "cloathing" which points up the distressing effect of inflation on a sum determined over a hundred and fifty years ago. The tribesmen have complained of the shrinkage in the latest Federal payment of cloth.

When the "Calico treaty" was signed, $4,500 would buy a satisfactory number of domestic animals, and a reasonable amount of cloth and farm equipment. As prices rose and the $4,500 shrank in purchasing power, it seemed practical to expend the entire sum on cloth as the only item on the list of which enough could be bought to "go round."

Gave Grain to Starving Army

In that fixed figure lies the Indians' present grievance. Through prosperity and depression, the yard goods has shrunk and stretched with the dollar. The 1951 payment, shared by 5,700 Indians, is little more than a token. It threatens to leave some of them short-skirted and short-shirted. It is the quantity, not the quality, that the Indians object to. Nowadays, yard goods of more fashionable—and expensive—chambrays and flowered seersuckers make up each year's payment instead of calico and muslin.

While the Iroquois were not always friendly in colonial days, several members of the confederacy later aided the cause of the American Revolution. When Washington's Army was starving at Valley Forge during the winter of 1777-78, they came to the rescue with 600 bushels of grain from their own scanty stores. This service Washington never forgot.

A bill currently before Congress would authorize annual settlement

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to a Mikimoto pearl, from binoculars to a parasol (illustration, below). If you order a sofa, it may well be delivered on a bicycle.

Everywhere, in the most unexpected places, are shrines; the severe, undecorated shrines of the Shinto faith, and the elaborate Buddhist shrines with their smell of incense and gleam of silver and gold. In Tokyo, a shrine on the roof of a modern department store is not a curiosity; it is taken for granted.

NOTE: Tokyo is shown on the Society's map of Japan and Korea.

For additional information, see "Japan Tries Freedom's Road," in the *National Geographic Magazine* for May, 1950; "Face of Japan," December, 1945; "Behind the Mask of Modern Japan," November, 1945; and "Women's Work in Japan," January, 1938.

See also "East Meets West on Tokyo's Avenue A," in the GEOGRAPHIC SCHOOL BULLETINS, April 26, 1948.

J. BAYLOR ROBERTS

TOKYO'S Z AVENUE HAS THE LOOK OF BOTH EAST AND WEST

Store signs in English attract Americans. Occidental dress predominates. The East speaks out in the slit bamboo sidewalk shade, the manner of carrying babies, and the Oriental signs.

Bulletin No. 4, October 8, 1951

The Oyster Returns to Nation's Menus

THAT versatile mollusk, the oyster, is back on the nation's menus. When September arrived, restaurants dusted off signs reading "Oysters R in Season." Shuckers honed their oyster openers. September with its "r" multiplies United States oyster consumption and opens a new season for a $30,000,000-a-year fishery.

Stranger than fiction are the life and habits of *Crassostrea virginica*, chief commercial American oyster. It can switch sexes in middle age. Through the swinging door of its stony shell it can pump 100 gallons of water a day, and it has a southern cousin that climbs trees.

R for Refrigeration

The erroneous belief that oysters are poisonous from May through August (the R-less months) probably arose in the days of slow transport. Though thinner and less meaty than in winter, summer oysters are perfectly edible. But long, unrefrigerated journeys in summer heat and dust turned the taste of inland-bound oysters to something less than the tang of the sea. The popular taboo thus founded may have saved the oyster from extinction.

Oysters spawn in summer, when the water temperature climbs to 65 or 70 degrees. Unless beset by such enemies as the oyster drill or tingle, which bores an eating window through the oyster's shell; or the starfish with clinging arms and a stomach that can be turned inside out to devour its prey, a female oyster can produce several hundred million eggs in a single season.

Floating in water, few of the eggs are fertilized. If it were not so, Chesapeake Bay—the world's greatest oyster bar—would soon be a solid mass of bivalves. Even fewer of the infant oysters live through their free-swimming larval stage to "set," as tiny shelled "spat," on underwater shelves of rock or the empty shells which oystermen sow as "cultch."

During the summer spawning season, most oystermen refrain from taking the bivalves. In many places it is illegal to do any oystering before September 15 or October 1.

French Like Green Oysters

Microscopic plants and animals, plankton strained from sea water, make oysters rich in copper, iron, iodine, and vitamins. How long the nutritious mollusk has been enjoyed as food is not known, but by 100 B.C. various species were cultivated by both Chinese and Romans.

Today they are grown all over the world (illustration, next page), except on shores washed by polar seas. The French like green oysters, and fatten them in water thick with green plant food to tint their flesh. Japan harvests oysters from thickets of bamboo sticks thrust into tidal flats of the Inland Sea. America's small, seldom-marketed "coon" oysters similarly "climb trees" by growing on the roots of mangroves which rise from the water twice a day as the tide falls.

United States oystermen lead all other countries combined by dredg-

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in cash in lieu of bolts of cotton. The Oneidas, now living in Wisconsin, for years have taken their allotment in cash. The New York nations, however, have rejected previous cash proposals, preferring to hold to the "calico" provision of the treaty.

Another treaty-given right to which the Iroquois still cling is that permitting them free crossing of the Niagara River border between Canada and the United States. On the third Saturday in July each year thousands of Indians from reservations on both sides of the river cross from one country to the other in commemoration of the old agreement.

Prosperous for the most part today, the Iroquois have many fine homes and well-managed farms. To them the annual "calico day" symbolizes perpetual peace and friendship. But with prices what they are in 1951, the Indians have made it plain that they could use a little more calico—and a little less symbolism.

NOTE: The region associated with the Six Nations may be located on the Society's map of the Northeastern United States.

For further information, see "Drums to Dynamos on the Mohawk," in the *National Geographic Magazine* for July, 1947; and "America's First Settlers, the Indians," November, 1937.

HOWELL WALKER

TERMS OF AN OLD-TIME TREATY ADORN A MODERN TUSCARORA'S MOOSE-SKIN SHIRT

"Colombo Plan" to Improve Asian Economy

TOMORROW'S standard of living may be better for one-quarter of mankind because of an economic bootstrap called the Colombo Plan.

This six-year blueprint for development of south and southeast Asia, sponsored by the British Commonwealth, went into action in July to lift the well-being of 570,000,000 people. Its $5,230,400,000 budget covers objectives from a dam the size of Hoover Dam to be built in northern India, to free public schools for the children of Singapore.

Borderline Existence

India, Pakistan, Ceylon, the Federation of Malaya, Singapore, North Borneo, Sarawak, and Brunei will spend this money between now and 1957 under the plan which was drawn up by an international consultative committee meeting in Colombo, Ceylon, in January, 1950. Later meetings last year were held in Sydney, Australia, and in London, England. Neighboring Burma, Thailand, Indonesia, and Indochina have been invited to take part in the program.

Hunger, illiteracy, and disease stalk the lives of great masses of people in these nations today. In many of India's cities and towns (illustration, inside cover) the rationed diet of an individual is only 12 ounces of grain a day. In Pakistan, nine yards of cotton cloth must make an entire year's wardrobe.

Not enough land is cultivated to feed populations growing at an estimated rate of 20,000 every 24 hours—an extra 150,000,000 in 20 years, roughly the population of the United States. Eight out of ten people depend directly upon the land. Often the land lacks sufficient water for crops and human use (illustration, next page). Average income per person across this vast area is about $56 per year.

Jute, rubber, tea, tin, fats, and oils long have flowed into world trade from these crowded countries. But trade and industry were hit hard by World War II. Inflation followed. Bengal's catastrophic famine of 1943 was but the pattern for somewhat lesser hunger in India in 1951.

Jungle TVA's

In the next six years, if the Colombo Plan fulfills its promise, 13,000,000 new acres will go under cultivation; 13,000,000 acres more will be irrigated; food-grain production will go up 6,000,000 tons or 10 per cent; electric-power capacity will be boosted by 1,100,000 kilowatts or 67 per cent.

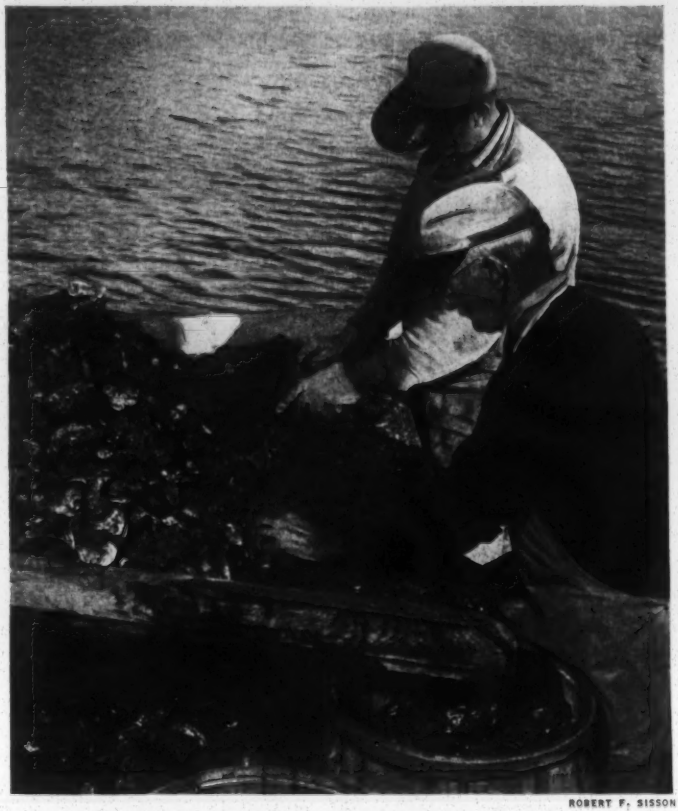
Across India, Pakistan, and Ceylon huge hydroelectric, irrigation, and flood-control projects will transform barren land and jungles, and provide power for new industries. India is expected to build 36 new railroads; Pakistan alone plans 6,333 new schools.

In Malaya, rice and rubber production are to be increased under the new project. Cosmopolitan Singapore, in addition to its educational goal, is to add 3,000 hospital beds, a new power station, a large international airport, and modern docks. British Borneo, Sarawak, and oil-rich Brunei

ing or tonging 75 to 80 million pounds of oyster meat a year, two-thirds of the world's production. Here, as in other countries, however, oyster yields have declined sharply since the turn of the century from over-fishing, pollution of coastal waters, and lack of proper cultivation. Once oysters stood proudly as the most valuable of all United States sea harvests; now they trail tuna, salmon, and shrimp in dollar return.

NOTE: The Society's map of The Northeastern United States shows Chesapeake Bay, source of the world's greatest oyster supply.

For further information, see "'Delmarva,' Gift of the Sea," in the *National Geographic Magazine* for September, 1950; and "Maryland Pilgrimage," February, 1927.



ROBERT F. SISSON

THE WATERS OF COTUIT BAY, MASSACHUSETTS, IMPART A SPECIAL FLAVOR TO CAPE COD OYSTERS, HERE BEING SHUCKED BY TWO SPEEDY BAY STATERS

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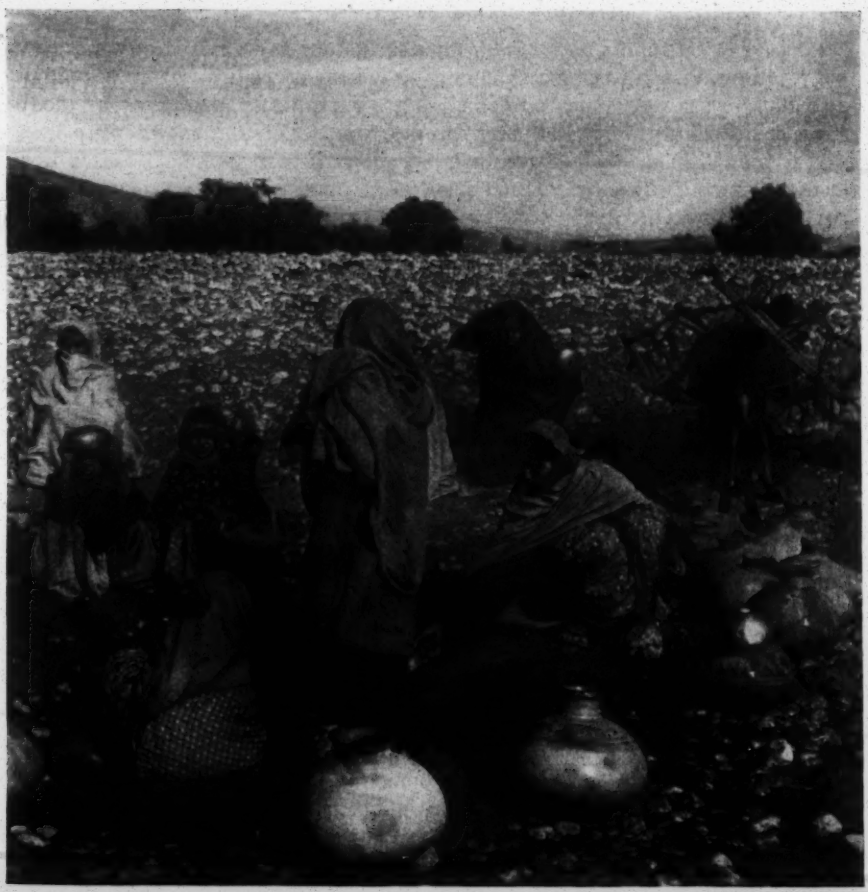
seek better transport and communications, as well as surveys for natural resources and improved agricultural techniques.

NOTE: The countries included in the Colombo Plan are shown on the Society's map of Asia and Adjacent Areas.

For further information, see "Ceylon, Island of the 'Lion People'," in the *National Geographic Magazine* for July, 1948; "Delhi, Capital of a New Dominion," November, 1947; "India Mosaic" and "South of Khyber Pass," April, 1946; "Keeping House in Borneo," September, 1945; "India—Yesterday, Today, and Tomorrow," October, 1943; 'Life Grows Grim in Singapore," November, 1941; "In the Realm of the Maharajas," December, 1940; "Behind the News in Singapore," July, 1940; and "Singapore: Far East Gibraltar," May, 1938.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, February 5, 1951, "'Nine Years After,' Singapore Fears Attack"; "Karachi Serves Pakistan as Port and Capital," March 6, 1950; "Punjab Still Readjusting to Partition," February 20, 1950; "Dam Project in Ceylon Reclaims Lost Land," November 14, 1949; and "Calcutta Claims First Place in Population," October 17, 1949.



MAYNARD OWEN WILLIAMS

PAKISTANI WOMEN DIP PRECIOUS WATER FROM A WELL DUG IN A DRY RIVER BED

The "'Colombo Plan" seeks to relieve such conditions as this, near Lachi. An annual dry season visits suffering upon thousands. When rains or spring thaws come, water flows in torrents, but quickly drains off. The habitual veil of Moslem lands is not a "must" for these rural women.